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A NEW GENUS AND SPECIES IN THE DIPLOPOD
FAMILY XYSTODESMIDAE (POLYDESMIDA)

BY RICHARD L. HOFFMAN

In recent years I have received three small collections of a very striking and unusual xystodesmid milliped from the Blue Ridge region of north Georgia. The novelty of this creature was recognized as long ago as 1953, but description has been deferred in the hope of securing living or freshly preserved specimens with the color pattern intact.

Thanks to the interest of my friend Robert E. Gordon, I was privileged at last to examine a living specimen of the species, and I now take the occasion to publish a name and description. Ordinarily the erection of monotypic genera in the Xystodesmidae is perhaps a rather hazardous undertaking, owing particularly to the large number of undescribed and often annectant species which continue to turn up in almost every collection from southeastern United States. I feel, however, that the animal under discussion is so singular in all important characters that its claim to generic status will probably not be seriously jeopardized by further discoveries.

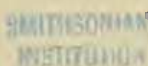
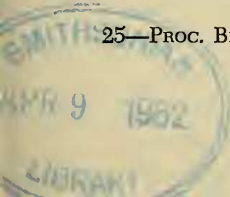
For their thoughtfulness and kind help, I am most indebted to Dr. Gordon and to Mr. Leslie Hubricht, who secured the first specimens of the new form almost a decade ago.

Family XYSTODESMIDAE Cook
Tribe Rhysodesmini Hoffman
Genus *Erdelyia*, new genus

Type species: Erdelyia saucra, new species.

Diagnosis: A rhysodesmine genus with the following diagnostic characters: Head smooth and polished, epicranial suture distinct and punctate, ventrally bifurcate into two conspicuous inter-antennal sutures. Facial setae as follows: vertigial 2-2; subantennal 1-1; frontal, 2-2; no trace of interantennals. Genae almost flat, without distinct median impression. Antennae with four terminal sensory cones.

Body moderate in size, width/length ratio about 22 per cent. Paranota moderate, depressed, anterior corners of paranota 2-4 acutely pro-



duced cephaloventrad; posterior corners of these and most other paranota broadly rounded, the posterior edges not margined. Ozopores in normal sequence, small, opening dorsally on small, poorly defined peritremata. Scapuloerae distinct, sharp, submarginal. Tergites essentially smooth and polished, interzonal furrow not visible across dorsum of segments.

Sterna smooth and moderately convex between the legs, not produced into subcoxal spines nor divided by cruciform impressions. Sides of body smooth except for the vertically striate surface of the interzonal furrow. Stigmata moderate in size, not auriculate, similar in size, shape, and position. Sternum of 5th segment produced into two small setiferous paramedian knobs between the fourth pair of legs.

Coxae of legs provided with long, slender acute spines which arise at the distal end and are abruptly recurved, the tips extending back mesiad to the proximal end of the podomere.

Gonopod aperture large, oval, the anterior edge flush with segmental surface, the posterior edge elevated into a high flange, vertical to the flat sternal area of the 7th segment. Gonopods of the typical rhyso-desmine type: coxae elongate and somewhat flattened, attached by a small sternal remnant, the solenite basally rather thick but distally very attenuated; telopodites long, nearly straight, and parallel, the setose prefemoral region scarcely thickened, with an acicular prefemoral process. Tibiotarsus of gonopods flattened, laminate, slightly curved dorsad over coxa, with a large, subterminal tibial branch. See Figs. 5 and 6.

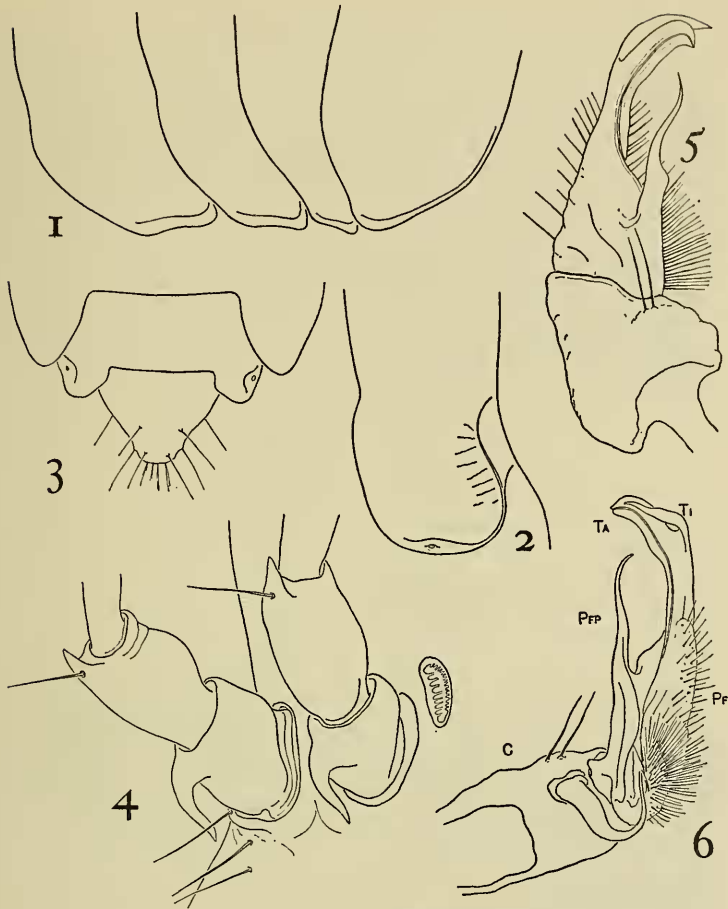
Characters of the female sex unknown.

Classification: The tribe Rhyso-desmini is a group of xystodesmid genera characterized in part by gonopod structure, and in part by the intrageneric conservatism of gonopod form in contrast to specific diversification in body facies. As originally conceived, the group included the nominal genera:

- Rhyso-desmus* Cook, 1895
- Cruzodesmus* Chamberlin, 1943
- Acentronus* Chamberlin, 1943
- Boraria* Chamberlin, 1943
- Howellaria* Hoffman, 1950
- Cherokia* Chamberlin, 1949
- Pleurolooma* Rafinesque, 1820

Of these genera, *Erdelyia* is perhaps closest to *Cherokia* in over-all form of the gonopods, but *E. saucra* differs from *C. georgiana* in nearly all other important characters. The only other genus with a tibial process—*Pleurolooma*—has a few species with the size, tergal texture, and convexity of *saucra*, but all forms of *Pleurolooma* differ otherwise in the form of both sterna and paranota.

The presence or absence of coxal spines in xystodesmids is not, per se, necessarily a generic character, but the remarkable form of these spines in *E. saucra* is not duplicated elsewhere in the Diplopoda, and must be accounted as strong supplementary evidence for the considerable systematic isolation of this genus. The shape and position of the coxal



FIGS. 1-6. *Erdelyia saucra*, new species: FIG. 1.—Lateral end of collum and paranota of segments 2-4, dorsolateral aspect, to show acutely angular anterior corners of paranota. FIG. 2.—Parantotum of segment 10, dorsolateral aspect. FIG. 3.—Segments 19-20, dorsal aspect, to show shape of epiproct and of paranota of segment 19. FIG. 4.—Bases of legs of segment 15, right side of body, ventrolateral aspect to show shape and armature of coxae and prefemora, also the anterior stigma of the segment. FIG. 5.—Left gonopod of holotype, dorsal aspect. FIG. 6.—Left gonopod of holotype, mesial aspect. Abbreviations: C, coxa; PF, prefemur; PFP, prefemoral process; TA, tarsus; TI, tibial process.

spines constitutes a ready recognition character for field identification. Presumably merely by flexing the legs slightly ventrad, the living animal is able to hang securely upside-down on such a smooth surface as the palm of a hand!

***Erdelyia saucra*, new species**

Figs. 1-6

Holotype: Adult male, U. S. Nat. Mus. No. D-620, from a wooded area along Georgia Highway 180, about 0.5 mile west of the road up Brasstown Bald, in Union County, Georgia. Collected 19 July 1961, by Robert E. Gordon and James A. MacMahon (Gordon's field No. 579).

Diagnosis: With the characters of the genus. Easily recognized by the smooth tergites, depressed and rounded paranota, retrorse coxal spines, shape of the gonopods, and the distinctive color pattern.

Description of holotype: Length about 38 mm, greatest width 8.2 mm; width/length ratio about 22 per cent. Paranota depressed, creating a high height/width ratio of 69 per cent at midbody. Body essentially parallel-sided between segments 6 and 13, narrowing gradually at both ends as indicated by the following width values for selected segments:

Collum	5.7 mm
2nd	6.6
3rd	7.0
4th	7.5
5th	7.8
6th-8th	8.1
9th-11th	8.2
14th	7.7
16th	7.3
18th	4.8

Color of living specimen bright and distinctive, with dorsal side of prozonites and anterior half of metazonites, frons and vertex, and base and center of epiproct dark reddish-brown or mahogany. Caudolateral halves of paranota and margins of epiproct light creamy yellow. Each metatergite with a broad transverse dark red stripe between the paranotal spots. Basal antennal articles, clypeus and labrum, ventral surfaces of body, and bases of legs whitish; legs becoming more reddish distally. Distal antennal articles light brown.

Head capsule normal in appearance, oval, convex, smooth and polished; width across genal apices 4.6 mm. Epicranial suture (see appended note 1) prominent, its ventral half with a single series of small punctations, bifurcated into distinct interantennal sutures. Interantennal isthmus broad (1.5 mm) and smooth. Genae not margined laterally, slightly convex and with only a trace of median impression, the ends broadly rounded and slightly extending laterad beyond adjacent margins of the cranium.

Facial setae as follows: *vertigial* 2-2, forming a somewhat procurved row with the innermost seta of each pair set lower on the vertex than the outer, the space between the pairs greater than the distance between the setae of each pair; *subantennal* 1-1, each located near the lower, inner arc of the antennal socket; *frontal* 2-2, the outermost of each pair located in a slight depression at the lower end of the genal region, just

mesiad to a short submarginal series of about 3 or 4 genal setae; *clypeal* about 8-8, slightly irregular in spacing; *labral* about 12-12, the outermost members of this series merging with the lower genal setae.

Antennae long (8.0 mm) and slender, reaching back to the middle of paranota of 5th segment. Article 1 broadest, short, globose, subglabrous. Articles 2-6 approximately equal in length and similar in shape except that 6 is less clavate distally than the others. Article 7 small, longer than broad, cylindrical, apically truncate, its distal edge not intumed between the four small, widely separated sensory cones. Antennae nearly glabrous proximally, becoming more densely invested distally, the setae of article 6 very numerous, dense and procumbent, those of article 7 apically forming a long, fine fringe around the sensory cones.

Collum broad, smooth, polished, almost exactly hexagonal in shape in that both anterior and posterior edges converge evenly laterad, producing a symmetrical, apically rounded lateral end; anterior edge with a deep, distinct, submarginal groove which isolates the lateral end of the collum but does not attain the caudal edge (*cf.* Fig. 1).

Tergites of body segments medially smooth and polished, becoming slightly coriaceous on the paranota. Latter moderate in size, strongly depressed on most segments and continuing slope of the middorsum. Peritremata and lateral margins not strongly set off and nearly flat, the submarginal depression not reaching caudal edge of paranota, latter not margined or otherwise set off. Prozonites and metazonites continuous dorsally, only a fine suture between them visible, their textures essentially the same. A faint, shallow, interzonal furrow begins to form in front of the paranotal bases.

Segments 2-4 subsimilar in appearance (Fig. 1), the paranota depressed and projecting cephalad, their anterior corners forming acute angles, the posterior broadly rounded. Paranota of segment 5 more nearly transverse, but of the same general shape; the ozopore located dorsally in a small and poorly defined peritreme, in the anterior half of the paranotal length.

Segments 6-12 similar, the paranota transverse, both corners broadly rounded; lateral and caudal edges convex, the latter bowed caudad beyond caudal edge of metatergites. Scapulae distinct, sharply defined on the anterior paranotal arc, but becoming increasingly submarginal toward the body and exposing much of front surface of paranota as seen in dorsal aspect (see Fig. 2). Segments 13-19 decreasing in width gradually, the paranota becoming somewhat more horizontal and their corners increasingly produced caudad, and the ozopores likewise becoming increasingly posterior in their location on the margin. Paranota of segment 19 small, short, not evenly rounded but with the inner edge tending to be distinctly oblique (Fig. 3). Metatergites of segments 17-19 with about three irregular transverse rows of very small granules, about 20 in each row.

Epiproct (Fig. 3) evenly conical in dorsal appearance, its surface

smooth and minutely granular. Ventrolateral corners of paraprocts slightly obliquely striated, the remainder of these structures smooth and almost flat except for the single paramedian setiferous knob near the center of each. Free edges of paraprocts expanded into pronounced marginal swellings, becoming thicker upward, the marginal seta located at the widest point. Hypoproct a broadly oval plate, its surface smooth and unmodified except for a slight transverse basal thickening; paramedian subapical setae widely separated from each other and slightly removed from edge of plate, the median apical projection large and distinct (note 2).

Pleural areas (note 3) unmodified, smooth; caudal edge of each metazonite with a distinct raised rim preceded by a submarginal depression running from underside of paranota to top of coxal sockets. Interzonal furrow becoming distinct and broad down sides, rather shallow but with the anterior edge elevated and sharply defined, particularly in front of stigmata; furrow distinctly and finely striated vertically, the resulting texture contrasting sharply with the adjacent smooth segmental surface. Stigmata elongate-oval (Fig. 4), similar in size and shape except that anterior stigmata are broadest dorsally, the posterior broadest ventrally. No elevated stigmal margins, each opening is slightly but distinctly separated from both the coxal socket and coxal condyle, the latter small and obscure.

Sternal areas slightly elevated medially between the legs, sloping off both toward the caudal edge of segment and the interzonal furrow. No subcoxal spines are formed, but the sterna are produced at base of each leg into a low but distinct subcoxal "sleeve" which slightly elevates the coxal bases from adjacent sternal surface. Anterior legs of each segment set farther apart than the posterior. Sterna glabrous except for two pairs of large macrosetae forming a transverse row between the anterior legs, and three pairs between the posterior legs of each segment. Interzonal furrow sharply defined across venter. Sternum of 5th segment produced into two low, setiferous, paramedian knobs between legs of the 4th pair. Sternum of 6th segment distinctly concave between 7th pair of legs to accommodate tips of the gonopods.

Legs long, distal half of femora visible from above when the legs are extended laterad. Podomeres in decreasing order of length: 3-6-2-1-4-5, all are only sparsely setose except tarsus which is covered with numerous long setae particularly near the distal end. Femora somewhat more clavate than usual for the family. Coxae with very long slender spines which arise near the distal end, then abruptly recurved mesiad, the tips reaching back to bases of coxae (Fig. 4). Prefemora with the usual acute, slightly curved, distal spine. Pretarsus long and evenly curved on all legs, somewhat compressed and ellipsoidal in cross-section, but not distinctly carinate on the dorsal side.

Prozonite of 7th segment reduced to a very thin transverse strip by the large, symmetrically oval gonopod aperture. Front edge of latter flush with segmental surface; back edge strongly elevated into a high

flange in front of and between coxae of 8th pair of legs, the intervening sternal area depressed and flat. Gonopods of moderate size, the coxae retracted within the body; the elongate, nearly straight telopodites completely exposed, parallel, and directed cephalad between legs of the 6th segment. Telopodite continuous, e.g., no cingulum at the end of the slender, setose, prefemoral region. Latter with a long, slender, aricular prefemoral process on the coxal side. Telopodite narrowed distally, with a long, slender, subterminal tibial process (Fig. 6, TI), extending distad beside the major terminal branch, but the two are somewhat divergent distally. Tarsal branch (TA) flat, laminate, slightly curved, without modifications.

Distribution: The Blue Ridge range in northern Georgia, in the vicinity of Brasstown Bald. Aside from the type locality, specimens (all paratypes, retained for the present in my personal collection) are at hand from:

GEORGIA: Towns County: Enota Glade Picnic Area, east of Brasstown Bald, 3 ♂♂, 7 June 1953, Leslie Hubricht. White County: wooded hillside, 4.5 miles northeast of Cleveland, 2 ♂♂, 12 March 1961, Leslie Hubricht.

Almost certainly the species will be found to occur in nearby counties in north Georgia, such as Rabun, Habersham, Lumpkin, and Fannin.

NOTES

Note 1. Epicranial suture. This term from insect morphology seems applicable to the diplopod feature heretofore referred to as the vertigial sulcus. In most species this suture is a simple shallow median groove, in others—particularly species in the Rhysodesmini—the suture is bifurcated at its lower end with the two forks running lateral toward the antennal sockets.

Note 2. The terms epiproct, paraproct, and hypoproct are much to be preferred in favor of such earlier designations as telson, anal valves, and preanal scale. Their classical derivation is more universal, and the words themselves are less misleading, as they allude to the *location* of the structures and not to their supposed morphological identities.

Note 3. Pleural areas. By this term I mean to imply the sides of the segment between the paranota and the coxal sockets, and not that I consider this region morphologically homologous with the true pleurites of other diplopod orders. My usage is thus one of topography, and not morphology.

REFERENCE

- Hoffman, Richard L. 1960. Revision of the milliped genus *Cherokia* (Polydesmida: Xystodesmidae). Proc. U. S. Nat. Mus., vol. 112, pp. 227–264 (for original reference to the tribe Rhysodesmini).